

WHAT WE CLAIM IS:

1. An amusement ride assembly including:
a rotatable endless loop cable spanning between end stations;
5 a drive system operable to rotate the loop cable; and
a passenger carrier suspended from the cable, including a roller mechanism to enable the passenger carrier to free-roll along the cable and an associated clamping mechanism to alternatively fix the passenger carrier to the cable.
- 10 2. An amusement ride assembly according to claim 1, including an electronic control system to control the drive system and which enables actuation of the clamping mechanism to fix the passenger carrier to the cable when the passenger carrier is at a position along the cable remote from either of the end stations.
- 15 3. An amusement ride assembly according to claim 2, wherein the control system includes a number of proximity sensors which are located on the passenger carrier, and/or either or both of the end stations for determining the distance of the passenger carrier from either or both of the end stations.
- 20 4. An amusement ride assembly according to either one of claims 2 and 3, wherein the control system includes a distance measurement device associated with the roller mechanism of the passenger carrier to measure the distance travelled by the passenger carrier along the loop cable.
- 25 5. An amusement ride assembly according to any one of claims 2-4, including a speedometer associated with the roller mechanism of the passenger carrier to indicate the speed of the passenger carrier as it travels along the loop cable.
- 30 6. An amusement ride assembly according to any one of claims 2-5, wherein the control system includes one or more clamp sensors associated with the clamping mechanism for sensing actuation of the clamping mechanism.

7. An amusement ride assembly according to any one of claims 2-6, wherein the control system is switchable between an automatic mode in which the control system controls movement of the passenger carrier along the cable according to preset ride settings, and a manual mode in which an operator controls movement of the passenger carrier along the cable.

8. An amusement ride assembly according to claim 7, wherein the control system is arranged to switch from automatic mode to manual mode on detection of a fault.

9. An amusement ride assembly according to claim 8, including one or more fault sensors arranged to detect any one or more of the following: proximity of the passenger carrier to either of the end stations; actuation of the clamping mechanism; speed of the passenger carrier along the loop cable; and distance travelled by the passenger carrier along the loop cable.

10. An amusement ride assembly according to any one of claims 2-9, wherein the control system includes a control module at an end station at each end of the cable.

11. An amusement ride assembly according to claim 10, wherein the control modules are arranged to communicate via a radio link.

12. An amusement ride assembly according to claim 10 or 11, wherein the control system also includes a passenger carrier control module located on the passenger carrier.

13. An amusement ride assembly according to claim 12, wherein the passenger carrier control module includes a radio transmitter/receiver for communicating with the end station control module(s) for actuating the clamping mechanism of the passenger carrier.

14. An amusement ride assembly according to claim 12, wherein the passenger carrier control module is arranged to actuate the clamping mechanism based on preset programming of the passenger carrier control module.

5 15. An amusement ride assembly according to any one of the preceding claims, wherein the clamping mechanism is hydraulically powered.

16. An amusement ride assembly according to any one of the preceding claims, wherein the passenger carrier also includes a swivel mechanism which is operable to
10 rotate the passenger carrier about a substantially vertical axis.

17. An amusement ride assembly according to any one of the preceding claims, wherein the drive system includes a bull wheel about which the cable passes in each of the end stations.

15 18. An amusement ride assembly according to any one of the preceding claims, wherein the drive system is operable to rotate the cable in either direction.

19. An amusement ride assembly according to any one of the preceding claims, wherein the drive system includes a cable tensioning system which is operable to adjust
20 the slack and arc of the cable between the end stations.

20. An amusement ride assembly according to any one of claims 2-19, wherein the control system is arranged to operate the drive system to rotate the loop cable in the direction the passenger carrier travels along the cable, at the same time as the passenger carrier travels along the cable.

25 21. An amusement ride assembly according to claim 20, wherein the control system is arranged to actuate the clamping mechanism to fix the passenger carrier to the loop cable when the passenger carrier has slowed down to a speed which is similar to the speed of the cable.

22. An amusement ride assembly according to any one of the preceding claims, wherein the passenger carrier is arranged to seat passengers back to back.
23. An amusement ride assembly according to any one of the preceding claims,
5 including two or more passenger carriers.
24. An amusement ride assembly according to claim 23, including two passenger carriers, one carried on each side of the loop cable.
- 10 25. An amusement ride according to any one of the preceding claims, further including one or more intermediate stations located between the end stations which support the cable intermediate of its length.
26. A method of providing an amusement ride including the steps of:
- 15 (a) loading a passenger carrier with one or more passengers;
(b) allowing the passenger carrier to free-roll under gravity along a span of a loop cable from a position at or toward one station, toward another station;
(c) clamping the passenger carrier to the loop cable at a specific point intermediate of the distance between the two stations; and
20 (d) rotating the loop cable to move the passenger carrier further between the stations.
27. A method according to claim 26, including clamping the passenger carrier to the loop cable when the speed of the passenger carrier drops to within a predetermined
25 speed relative to the cable.
28. A method according to either one of claims 26 and 27, including rotating the loop cable in the same direction of travel as the free-rolling passenger carrier.
- 30 29. A method according to claim 28, including clamping the passenger carrier to the loop cable when the speed of the free-rolling passenger carrier is similar to the speed of the cable.

30. An amusement ride assembly including a cascade of two or more stages, each stage including:

a rotatable endless loop cable spanning between two stations; and

5 a drive system operable to rotate the loop cable, the ride further including: one or more passenger carriers, which can accommodate one or more passengers, attachable to the loop cables of each stage and a suspension member which suspends the passenger carrier(s) to the loop cables, wherein the suspension member includes a roller mechanism to enable the passenger carrier(s) to free-roll along the loop cables and a clamping mechanism which can be actuated to alternatively fix the passenger carrier(s)
10 to the loop cables.

31. An amusement ride assembly according to claim 30, wherein the passenger carrier(s) may transfer between loop cables of adjacent stages.

15 32. An amusement ride assembly according to claim 30 or 31, wherein a transfer station is provided between each stage to facilitate the transfer of the passenger carrier(s) between loop cables of adjacent stages.

20 33. An amusement ride assembly according to any one of claims 30-32, wherein one or more of the stations may form part of an adjacent stage.

25 34. An amusement ride assembly according to any one of claims 30-33, wherein passengers may be loaded or unloaded from the passenger carrier(s) at one or more of the stations.

30 35. An amusement ride assembly including:
a rotatable endless loop cable spanning between end stations;
a drive system operable to rotate the loop cable;
a passenger carrier suspended from the cable, including a roller mechanism to enable the passenger carrier to free-roll along the cable and an associated clamping mechanism to alternatively fix the passenger carrier to the cable; and

a control system arranged to allow the passenger carrier to free-roll part way along the cable after initial release of the passenger carrier at the commencement of a ride and to then actuate the clamping mechanism to fix the passenger carrier to the loop cable when the passenger carrier has slowed down to less than a predetermined speed.